Pacific Northwest Smart Grid Demonstration Project
Advancing Smart Grid Implementation

Over the past decade, the Pacific Northwest region has been a pioneer in the nation's emerging smart grid agenda, contributing technology, utility applications, customer engagement strategies and policy. The proposed Pacific Northwest Smart Grid Demonstration Project (PNW-SGDP) will take the region's involvement in smart grid to a new and exciting level.

The project, as planned, will be a unique demonstration of unprecedented geographic breadth across five Pacific Northwest states—Idaho, Montana, Oregon, Washington, and Wyoming. It will involve more than 60,000 metered customers, and contain many key functions of the future smart grid. Ultimately, the project will move the region and nation closer to establishing a more efficient and effective electricity infrastructure that's expected to help contain costs, reduce emissions, incorporate more wind power and other types of renewable energy, increase power grid reliability and provide greater flexibility for consumers.

Project partners represent a mix of public and private entities, and will fund half of the approximately $178 million cost. The partners have submitted a proposal for the rest of the funding to the U.S. Department of Energy (DOE), which is providing American Recovery and Reinvestment Act stimulus dollars to support regional smart grid demonstration projects around the nation. DOE wants to show how smart grid technology can enhance the safety, reliability and efficiency of energy delivery on a regional and national level.

The five-year, cost-shared PNW-SGDP will yield benefits beyond advances in smart grid implementation, including at its peak the creation of as many as 1,500 jobs in manufacturing, installing, and operating smart grid equipment, telecommunications networks, software, and controls. The proposed project will also help spur a vibrant new smart grid industry and a more cost-effective, reliable electricity supply, both of which are foundations for U.S. economic growth and international competitiveness.

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Project Objectives. The Pacific Northwest Smart Grid Demonstration Project will:

- validate new smart grid technologies and business models
- provide two-way communication between distributed generation, storage, and demand assets and the existing grid infrastructure
- quantify smart grid costs and benefits
- advance standards for "interoperability" (the smooth, seamless integration of all elements of the electric system) and cyber security approaches.

By ensuring that that these outcomes can be readily and flexibly adapted and widely replicated, this demonstration will be a foundation for the future of the nation's electric power grid.

How it will be accomplished: The project team will implement a unique distributed communication, control and incentive system designed to bring the electric transmission system into the information age. A new combination of devices, software and advanced analytical tools will give homeowners more information about their energy use and cost. Data will be collected to provide insights into energy consumers' behavior while testing new technologies. The project expands upon the region's experience in the 2006 DOE-funded Pacific Northwest GridWise™ Demonstration Project on the Olympic Peninsula, which successfully tested demand-response concepts and technologies.

The proposal team: Battelle leads a strong collaboration that includes the Bonneville Power Administration and the following 12 regional load-serving utilities:

- Avista Utilities - Pullman, WA
- Benton PUD - Kennewick, WA.
- City of Ellensburg - Ellensburg, WA.
- Flathead Electric Cooperative, Inc. - Libby, MT.
- Northwestern Energy - Montana
- Idaho Falls Power - Idaho Falls, ID
- Inland Power & Light - Airway Heights, WA.
- Lower Valley Energy - Jackson Hole, WY
- Milton-Freewater City Light & Power - Milton-Freewater, OR.
- Peninsula Light Company - Fox Island, WA.
- Portland General Electric - Portland, OR.
- Seattle City Light - Seattle, WA.

The demonstration also involves a diverse team of outstanding vendor partners including: AREVA USA, IBM, 3TIER Inc., Netezza Corp., QualityLogic Inc. and Drummond Group Inc. The University of Washington and Washington State University also will be directly involved, and there will be outreach to other academic centers.

Pacific Northwest Smart Grid Demonstration Project, by the numbers:

The proposed project, led by Battelle, will:

- Run 5 years and span 5 Pacific Northwest states: Idaho, Montana, Oregon, Washington and Wyoming
- Involve 12 utilities in the five-state region, the Bonneville Power Administration, and multiple technology partners
- Include direct participation from 2 universities—the University of Washington and Washington State University—with outreach to other academic centers
- Involve more than 60,000 metered customers and will engage, using smart grid technologies, system electricity assets exceeding 112 megawatts
- Cost approximately $178 million, half of which will be cost-shared by the project partners.